REMARKS

Claims 1-31, all of which were rejected by the Examiner in the above Office Action, are pending in the application. By this Amendment Applicant has amended claims 1, 18 and 29 in the manner discussed below.

Claim Rejections Under 35 U.S.C. §103(a)

The Examiner rejected claims 1-31 under 35 U.S.C. §102(e) as being anticipated by Magnussen et al. (U.S. Pat. No. 6,909,713).

Magnussen System

Magnussen describes a method for receiving, at a network switch having at least one protocol processor, data having an address. In the Magnussen system, at least part of the address is hashed in order to obtain an identifier of a protocol processor in the switch. Specifically, Magnussen's system is configured such that the address information within data frames sent to and from a particular client is hashed to direct these frames to the same protocol processor:

> The present invention is a method and apparatus to facilitate the distribution of data packets to protocol processors within switches. In one example embodiment, when data frames are sent from a client to a server, a novel classifier in the switch hashes at least part of the source address, for example the client's address residing in a header field for the source IP address, to determine which protocol processor to direct the data frames to. When data frames are sent in the other direction, from server to client, the classifier performs source address preservation and still hashes the client's address to determine which protocol processor to direct the data frames to, even though the client's address may now reside in a different header field of the data frame, such as a header field for the destination IP address. Thus, the same address, in this case the client's address, is hashed to direct data frames to the same protocol processor, regardless of which header field the address resides in.
> [3:15-30, emphasis added]

Accordingly, it is clear that within the Magnussen system protocol processors are assigned to particular hash values, each of which corresponds to a single client address:

> FIG. 6 shows an example method for performing a hash function **600** to relate an IP address to a particular protocol processor in a switch. Protocol processors may be assigned to identifiers and/or possible hash values **602**.
> [4:61-64]

Differences Between the System of Invention and a Magnussen System

As defined by the pending claims, the present invention pertains in one aspect to a system in which a protocol processing core included among plural protocol processing cores compatible with a particular protocol or event type is selected or assigned to process portions of a given flow characterized by the protocol or containing events of the particular event type. The present amendments to the pending claims reflect this aspect of the present invention.

Embodiments of the present invention provide numerous advantages not available in the prior art. Specifically, such embodiments provide a unique approach to the scaling of the stateful protocol processing problem through the dynamic assignment of the processing of particular portions of a flow among multiple processors. Consistent with this approach, packets/events for the flow are routed to a particular processor while the flow is initially being processed. If the flow is no longer being processed, the particular processor may be released from assignment to the flow and another processor could be assigned to the flow if it were again required to be processed. This approach offers advantages relative to systems, such as those of the cited prior art, in which flows are statically assigned to particular processors, or vice-versa. For example, in the case in which specific flows are statically assigned to specific processors in a multi-processor system, situations could arise in which the traffic from multiple flows is routed to a single processor and all others are idle.

Pending claim 1 defines the scope of one aspect of the present invention:

1 (Currently Amended).   A method of processing data in a stateful protocol processing system configured to process multiple flows of messages, said method comprising:
        receiving a first plurality of messages of a first of said flows, said first of said flows comporting with a first stateful protocol;
        deriving events of at least a first type and a second type from said first plurality of messages;
        assigning a first protocol processing core to process said events of said first type in accordance with said first stateful protocol, said first protocol processing core being selected from among a plurality of protocol processing cores compatible with said events of said first type; and
        assigning a second protocol processing core to process said events of said second type in accordance with said first stateful protocol.

Applicant observes that pending claim 1 contemplates that an event type of an event received from a flow is derived and a compatible processing core, selected from among plural processing cores compatible with the derived event type, is assigned to process one or more events of the flow. Applicant respectfully submits that Magnussen does not suggest deriving or otherwise determining a received event type or protocol associated with the received event. Nor does Magnussen subsequently select or assign a processing core included among plural processing cores compatible with the received event or protocol to process such event.

As discussed above, Magnusson describes a system in which protocol processors are statically assigned to particular hash values, each of which corresponds to a single client address. Accordingly, in the Magnussen system a protocol processing core is not selected from among plural protocol processing cores compatible with a received event type or applicable protocol. Rather, in the Magnussen system a static relationship is established between a given client address and a protocol processing core.

In summary, Magnussen does not enable multiple processors to be capable of being assigned to process a given received event as presently claimed. Moreover, Magnussen does not contemplate deriving a type or protocol applicable to a received event, nor specific assignment of a processor core included among multiple cores compatible with the type or protocol as presently claimed. Rather, in the Magnussen system the routing of received data is <u>independent</u> of any event type or other characteristic of the received data, which obviates the need to select from among plural available processors compatible with the received event type.

Accordingly, Applicant respectfully requests reconsideration of the outstanding rejection of claims 1-31 under 35 U.S.C. §102(e).

The Examiner has also provisionally rejected claims 1-31 under the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of copending Application Serial No. 10/211,434. Applicant will file an appropriately executed terminal disclaimer upon receiving an indication of allowance of the pending claims over the prior art of record in the application.
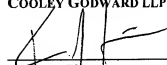
Applicant respectfully requests consideration of the remarks herein prior to further examination of the above-identified application. The undersigned would of course be available to discuss the present application with the Examiner if, in the opinion of the Examiner, such a discussion could lead to resolution of any outstanding issues.

Dated: May 21 , 2007

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